

## A Review of the Genus *Plocoglottis* (Orchidaceae) in Thailand

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### Abstract

A review of the genus *Plocoglottis* in Thailand is presented. Five species are recognised. Four of them, *P. javanica*, *P. lowii*, *P. quadrifolia* and *P. gigantea*, are widespread in Malesia and have their northernmost limit of distribution in Peninsular Thailand, and *P. javanica* is also known in Vietnam. The fifth, *P. bokorensis* is also found in Cambodia, Laos and Vietnam and is in Thailand known from a few widely scattered localities in the central, eastern, southeastern, southwestern and northern regions.

### Introduction

*Plocoglottis* Blume is a terrestrial orchid genus of 40 to 45 species and is centred in Malesia, ranging from the Andaman Islands, southern Myanmar, Thailand, Cambodia and Vietnam eastwards as far as New Guinea, Bismarck Archipelago and the Solomon Islands. Plants of this genus are found in lowland, hill and lower montane forest up to about 1200 m. Based on all of the available evidence (including morphological, anatomical and molecular data) the genus was placed in tribe Collabieae of subfamily Epidendroideae, although it was pointed out that further studies on this tribe are needed (Pridgeon *et al.*, 2005: 116).

*Plocoglottis* is represented in Thailand by five uncommon species. In the first detailed treatment of the orchids of Thailand [see Seidenfaden and Smitinand 1959-1965: The Orchids of Thailand - A Preliminary List], only two species were listed, namely *P. javanica* Blume and *P. quadrifolia* J.J. Sm. (incorrectly identified as *Phaius longipes* (Hook.f.) Holttum). In the years following this initial publication a further three species were added, and in a brief overview of the Thai species of the genus (Seidenfaden, 1972), all five species that are currently accepted were already listed.

A detailed review of the older literature and a discussion of the taxonomic history of all of the species is provided in a later detailed treatment (Seidenfaden, 1986). Though invaluable to the professional botanist as well as the orchid-enthusiast, Seidenfaden's contributions did not include

taxonomic descriptions which are provided in the present review.

Four of the Thai species, *P. javanica*, *P. lowii* Rechb. f., *P. quadrifolia* and *P. gigantea* (Hook. f.) J.J. Sm. are widespread in the western part of Malesia (with *P. lowii* even ranging further eastwards to New Guinea in eastern Malesia), and have the northernmost limit of their distribution area in Peninsular Thailand and Vietnam (*P. javanica* only). The distribution area of the fifth Thai species, *P. bokorensis* (Gagnep.) Seidenf., is very different. This species is only found in Thailand and Indochina, and while widespread (but widely scattered) in the northern half of Thailand it does not seem to occur in the Peninsula of Thailand.

The plants of the genus *Plocoglottis* are sympodial herbs with or without pseudobulbs, and arise from short creeping rhizomes. Two different plant habits can be distinguished. In *P. javanica* and *P. lowii* the plants have narrowly-fusiform pseudobulbs with one apical leaf (rarely two), while the other species have elongate reed-like stems with several leaves. The erect or spreading leaves are generally plicate and have often long petioles. Inflorescences are lateral and arise at the base of the leafy stem. They are usually as long as to clearly longer than the leafy shoot. The medium-sized flowers have free sepals and petals, and a fleshy lip with an interesting explosive mechanism. This lip is united with the gynostemium base by two elastic flanges and snaps upwards when touched.

The present review is a precursory paper for a later contribution to the Flora of Thailand. No attempt has been made to provide a complete monographic treatment as very little material from outside of Thailand has been seen.

**Key to *Plocoglottis* in Thailand**

- 1. Plant with one leaf (rarely two leaves) on top of a narrowly-fusiform pseudobulb ..... 2
- 1. Stems reed-like with four or more leaves ..... 3
- 2. Petioles mostly 20–40 cm long. Side- margins of the lip entire ..... 1. *P. javanica*
- 2. Petioles shorter. Lip side margins erose-serrate, two conical calli near the lip front margin ..... 2. *P. lowii*
- 3. Lip side margins fimbriate or erose ..... 3. *P. quadrifolia*
- 3. Lip side margins entire ..... 4
- 4. Stems up to 1 m tall, without pseudobulbs. Sides of lip much recurved, lip broadest near the middle ..... 4. *P. gigantea*

4. Stems up to 50 cm tall, with prominent bottle-shaped basal pseudobulbs to 8 cm tall. Sides of lip not much recurved. lip broadest near the apex ..... 5. *P. bokorensis*

1. *Plocoglottis javanica* Blume

Bijdr. (1825) 381; Seidenfaden & Smitinand, Orch. Thailand (1961) 348; Seidenfaden, Bot. Tidsskr. 67 (1972) 108; Opera Bot. 89 (1986) 69; Seidenfaden & Wood, Orch. Penins. Malaysia & Singapore (1992) 181; Comber, Orch. Java (1990) 104; Orch. Sumatra (2001) 292. -**Types:** Indonesia, Java, Seribu, Blume s.n. (syn, L); Indonesia, Java, Mt. Salak, Blume s.n. (syn, L). **Fig. 1.**



**Figure 1.** *Plocoglottis javanica* Blume with solitary leaf (photo taken in Singapore). A. Plant; B. Flower. Photo: H. Kurzweil (HK 2774 voucher in SING).

Terrestrial **herbs**, evergreen, pseudobulbous. **Pseudobulbs** narrowly conical, terete, 4-10(-12) × 0.5-1 cm, *ca* 4 cm apart on a creeping rhizome to 1 cm thick, enclosed by fibrous leaf sheaths. **Leaf** 1, on the apex of the pseudobulb, elliptic-lanceolate, acute or acuminate, 46-61 × 6.8-9.4(-11.1) cm, plicate, glabrous; with petioles (13.5-)20-40 cm long. **Inflorescences** 46-70(-81) cm long, arising from the base of the leafy shoot, usually extending beyond the leaves, glabrous below, pubescent or rarely glabrous above; peduncles to 50 cm long; sterile bracts 3-5, lanceolate-oblong, tubular, acute, 1.5-3 cm long, subglabrous, two or three of them clustered at the stem base and the rest scattered higher up; raceme lax or semi-dense, 10- to 15-flowered; rachis

gradually elongating to 30 cm long; floral bracts ovate-lanceolate, acute, much shorter than the pedicel plus the ovary,  $6.5-10 \times 2-2.3$  mm. **Flowers** to 17 mm broad; yellow, blotched reddish, also reported as brown, lip largely yellow. Pedicel plus ovary ca 15 mm long, glabrous or pubescent. Sepals ovate-lanceolate, shortly acuminate, spreading, concave; median sepal 5-veined,  $10-15 \times 4-6$  mm; lateral sepals 7-veined,  $13-15 \times 2-5$  mm. Petals linear-falcate, acute, 5-veined,  $10-15 \times 2.2-2.9$  mm, spreading, their tips curved forwards. Lip ovate-lanceolate, shallowly 3-lobed in the apical part,  $8-9 \times 7-8$  mm, basally joined with the gynostemium, margins entire; midlobe an acute tip 0.5-2.5 mm long; side-lobes flabellate, obtuse, ca  $2 \times 3.5$  mm. Gynostemium straight, stout, 5.5-6.2 mm long, apically broadly winged, stigma cavity large.

*Specimens examined:* Peninsular Thailand, Pattani Province, Kao Kalakiri, *Kerr 0554* (K [fragment]); *ibid.*, Songkhla Province, Klawng Pi, *Kerr 0614* (BK, C, K); *ibid.*, Yala Province, Betong, *Maknoi 130* (QBG).

*Illustrations:* Seidenfaden (1986): fig. 34a-d; Seidenfaden & Wood (1992): fig. 78a; Comber (1990): pl. on page 104; Comber (2001): pl. on page 292; Pridgeon *et al.* (2005): pl. 45.

*Habitat and flowering time:* Rare in evergreen forest up to about 700 m. Flowering in April and from July to August.

*Distribution:* Peninsular Thailand (3 collections seen); also in Vietnam, the Andaman Islands, Malaya, Java, Sumatra and Borneo.

*Notes:* This species is similar to the much more common *Plocoglottis lowii*. Differentiating characters of the two species are the lip side margins which are entire in *P. javanica* but erose or fimbriate in *P. lowii*. The length of the petiole of the leaves can in most cases also be used to distinguish between the two species as *P. javanica* has usually an elongate petiole of (13.5-)20-40 cm while the leaf petiole of *P. lowii* is usually much shorter (up to 14 cm). Also the hairiness of the rachis has been used to differentiate between the two species (Seidenfaden, 1986: 69), but was here found not to be very significant as a few exceptions occur.

## 2. *Plocoglottis lowii* Rchb.f.

Gard. Chron. (1865) 434; Seidenfaden, Bot. Tidsskr. 67 (1972) 109; Opera Bot. 89 (1986) 70; Seidenfaden & Wood, Orch. Penins. Malaysia & Singapore (1992) 181; Comber, Orch. Sumatra (2001) 292; Beaman & al., Orch. Sarawak (2001) 383. – **Type:** Borneo, without locality, *Low* s.n. (W).



-*Plocoglottis porphyrophylla* Ridl., Trans. Linn. Soc. London, Bot. 3 (1893) 368. -Type: Peninsular Malaysia, Pahang, Pekan, *Ridley 394* (holo. SING!).

Terrestrial **herbs**, evergreen, pseudobulbous. **Pseudobulbs** narrowly conical, green to dark violet, 5-8(-15)  $\times$  1.1-1.5(-2) cm, *ca* 3 cm apart on a creeping rhizome; enclosed by fibrous leaf sheaths. **Leaves** 1(-2)(-3?, see 'Notes' below), on the apex of the pseudobulb, elliptic-lanceolate, acute, 30-59  $\times$  4.5-12 cm, plicate, glabrous, green or purple above, purple underneath; petioles (3-)6-14 cm long. **Inflorescences** 62-121 cm long, arising from the base of the leafy shoot, much taller than the leaves, pubescent, violet, once here observed with a side-branch; peduncles 48-84 cm long; sterile bracts 5-8, scattered along the flowering stem and a few clustered at its base, lanceolate-oblong, lower tubular, upper spreading, acute, (1.2-)1.6-4.5 cm long, glabrous or pubescent; raceme lax, 20- to 30-flowered, producing flowers for many weeks with 1-2 open at a time; rachis 14-36.5 cm long; floral bracts ovate-lanceolate, acuminate, green-violet, 6-11.7  $\times$  1.8-6 mm, much shorter than the pedicel plus the ovary, pubescent. **Flowers** to 30 mm in diameter; yellowish and greenish, with red or brown lines and blotches, bulging area on the inside of the lateral sepals mostly shiny red, petals also reported as reddish purple, lip epichile sometimes red, gynostemium light yellow; all parts except lip pubescent on both sides though gynostemium usually sparsely so. Pedicel and ovary 10-15 mm long, pubescent. Sepals oblong-lanceolate, subacute or acuminate, spreading; median sepal 7-veined, 10-16(-17)  $\times$  4-5.6 mm; lateral sepals 9-13  $\times$  (4.9-)5-7 mm, deflexed, tips inwards-curved, with a more or less pronounced bulging area on the sides that face each other. Petals narrowly triangular-lanceolate, spreading, gradually narrowed towards the tip, acute, 5- or 7-veined, 9.5-16.3  $\times$  2-4.5 mm. Lip ovate, 3-lobed in its upper part, (5-)5.5-8  $\times$  5-8.3 mm, spreading, united with the gynostemium at the base, with two pronounced apical conical calli, margins fimbriate or erose; midlobe an acute tip, (1-)1.3-2.5  $\times$  0.7-1.3 mm; side-lobes triangular, obtuse, 1.5-1.8  $\times$  1.5-2 mm. Gynostemium 4.5-8 mm long, straight, stout, pubescent. **Fruit** elongate-ellipsoid, 22-40  $\times$  3-8 mm, pubescent.

*Illustrations:* Seidenfaden (1972): fig. 27a-c; Seidenfaden (1986): fig. 35a-d; Seidenfaden & Wood (1992): figs. 78b-e; Comber (2001): pl. on page 292; Beaman *et al.* (2001): pl. 28D.

*Habitat and flowering time:* In evergreen forest, freshwater swamp forest, bamboo forest or sometimes in swampy grassland to 300 m elev. The few detailed collector's notes indicate limestone as bedrock. Flowering in April, June-July and October-February.

*Specimens examined:* Peninsular Thailand, Chumphon Province, Langsuan, *Kerr 0652* (C, C [spirit], K); *ibid.*, Surat Thani Province, Chaiya District, *Maxwell 87-151* (L); *ibid.*, Krabi Province, *Niyomdham 1746* (C spirit); *ibid.*, Krabi Province, Bang Kram Forest Reserve, *Larsen et al. 43403* (AAU); *ibid.*, Krabi Province, Bang Kram Forest Reserve, *Larsen & al. 43782* (C [spirit]); *ibid.*, Krabi Province, Kow Pra-Bahng Krahm Wildlife Sanctuary, *Maxwell 06-38* (Sc.ChM.Univ. = Herbarium of the Science Faculty of Chiang Mai University, Sc.ChM.Univ. [spirit]); *ibid.*, Krabi Province, *Thaithong 1794* (BCU [spirit]); *ibid.*, Krabi Province, Khao Nop Ju Jee, *Thorut 245* (BCU [spirit]); *ibid.*, Nakhon Si Thammarat Province, *Williams et al. 1361* (BKF [spirit]); *ibid.*, Trang Province, Thung Khai, *Larsen & al. 43982* (AAU, C [spirit], SING) [in bud, identification uncertain]; *ibid.*, Trang Province, Thung Khai, *Larsen & al. 43985* (AAU); *ibid.*, Trang Province, Thung Khai Botanical Garden [cultivated ?], *Mauric 5* (BKF); *ibid.*, Trang Province, Tung Kai, *QBG 10003* (QBG [spirit]); *ibid.*, Trang Province, Thung Khai, *Suddee 391* (BKF [s]); *ibid.*, Songkhla Province, Khao Keo, *Kerr 0627* (K); Tako, Langsuan, *Put 1753* (K).

*Distribution:* Peninsular Thailand (16 collections seen); also in the Andaman Islands, Malaya, Sumatra, Borneo, Moluccas and New Guinea.

*Notes:* This species is very distinct with its mostly solitary short-petioled leaf and the erose or fimbriate side margins of the lip. This and further distinguishing characters are also listed under the preceding species. The Thai plants listed here clearly match Reichenbach's (1865) original description. The bulging area on the lateral sepals referred to above is, however, subject to variation in the species.

A specimen from Trang (*Larsen & al. 43982*, AAU, C [spirit], SING) was collected in the bud stage, and was interpreted as a representative of a new species because of its unusual habit with three leaves on top of the pseudobulb (G. Seidenfaden, notes in his working files). While it will probably never be possible to identify the plant accurately due to the absence of flowers, it appears that the habit is not really unique as specimens with two leaves occur occasionally (though rarely) in this species. A flower bud that Seidenfaden had opened was found in the spirit collection at C, and exhibits the fringed side margins of the lip typical of this species. It therefore appears likely that the specimen is merely a slightly unusual representative of *Plocoglottis lowii*.

### 3. *Plocoglottis quadrifolia* J.J.Sm.

Bull. Jard. Bot. Buitenzorg III: 8 (1926) 36; Seidenfaden, Bot. Tidsskr. 67 (1972) 109; Opera Bot. 89 (1986) 70; Seidenfaden & Wood, Orch. Penins.

Malaysia & Singapore (1992) 181; Comber, Orch. Sumatra (2001) 290; N. Vaddhanaphuti, Wild Orch. Thailand (2005) 208. – **Type:** Indonesia, Sumatra, Agam, Boekit Batoe Banting, *Groeneveldt* 873 (holo, L!).  
*-Phaius longipes auct., non* (Hook.f.) Holtt.; Seidenfaden & Smitinand, Orch. Thailand (1961) 329.

Terrestrial **herbs**, evergreen, **stems** reed-like, 30-40 cm tall, with leaves in the upper half, lower half with sheathing leaves. **Leaves** 5-7, lanceolate-elliptic, acute, acuminate, blades  $11.5-21 \times (1.6-)$ 2-3.5 cm, plicate, glabrous, petiole to 1.5 cm long; leaves generally green with some purple. **Inflorescences** 67-92 cm tall, arising from the base of the leafy shoot, much taller than the leafy shoots, softly-pubescent; peduncles to 58 cm long; sterile bracts 7-8, scattered along the flowering stem and a few clustered at its base, lanceolate-oblong, acute, 1.6-5 cm long, glabrous or hairy, sheathing at the base and their upper part spreading; raceme lax, 10- to 25-flowered; rachis 14-37 cm long, pubescent; floral bracts ovate-lanceolate, acuminate,  $8-10 \times 2-4$  mm, mostly much shorter than the pedicel plus the ovary, sometimes yellowish purple. **Flowers** to 29 mm in diameter; mostly yellow with a red tinge, lateral sepals distally yellow and basally shiny red, lip yellow with red markings, apical half often pink, violet or red, gynostemium yellow or white. Pedicel and ovary 7-18 mm long, densely pubescent. Sepals ovate-lanceolate, subacute, 7- or 9-veined, spreading, hairy on the outside; median sepal  $18-25 \times 5.2-8$  mm; lateral sepals  $13-22 \times 5-10$  mm, with a shiny bulging area on the sides that face each other. Petals very narrowly ovate-lanceolate, subacute, spreading, 3- to 7-veined,  $18-25 \times 3-5$  mm, glabrous. Lip quadrangular but narrowed towards the base, 3-lobed in the apical half,  $8-12 \times 8-12$  mm, united with the gynostemium at the base, glabrous, margins fimbriate; midlobe a reflexed apical tooth,  $0.95-2 \times 1.2-2$  mm; sidelobes triangular or square, obtuse,  $2-5 \times 3.5-5$  mm, with obscure or prominent apical calli. Gynostemium straight, 9-11 mm long, slender, rostellum a short blunt beak.

*Specimens examined:* Peninsular Thailand, Surat Thani Province, Koh Pa-ngan, *Put* 756 (B, BK, C, C [spirit], K, P); *ibid.*, Nakhon Si Thammarat Province, Khao Luang, *Geesinck & Santisuk* 5483 (C, C [spirit], L); without locality, *Thaithong* 1374 (BCU [spirit]).

*Illustrations:* Seidenfaden & Smitinand (1961): fig. 252 [as *Phaius longipes* (Hook.f.) Holtt.]; Seidenfaden (1986): fig. 36a-e; Seidenfaden & Wood (1992): fig. 78f; Comber (2001): pl. on page 290; N. Vaddhanaphuti (2005): pl. on page 208.

*Habitat and flowering time:* Found in rock crevices in disturbed evergreen

forest, often along waterfalls. The plants are usually found in lower hill forests up to 500 m. Flowering in May.

*Distribution:* Peninsular Thailand (3 collections seen), also in Malaya and Sumatra.

*Notes:* Characteristic features of this species are the reed-like stems with several leaves, the median sepals which are about 18-25 mm long and the fimbriate lip side margins. As already pointed out by Smith (1926: 37), the species is close to *Plocoglottis lowii* but differs from it vegetatively.

#### 4. *Plocoglottis gigantea* (Hook.f.) J.J.Sm.

Rept. Spec. Nov. Regni Veg. 32 (1933) 228; Seidenfaden, Bot. Tidsskr. 67 (1972) 109; Opera Bot. 89 (1986) 70; Seidenfaden & Wood, Orch. Penins. Malaysia & Singapore (1992) 183; Comber, Orch. Sumatra (2001) 291. -*Alismorkis gigantea* (Hook.f.) Kuntze, Revis. Gen. Pl. 2 (1891) 650. -Basionym: *Calanthe gigantea* Hook.f., Fl. Brit. India 5 (1896) 856. – **Types:** Peninsular Malaysia, Perak, *Kings collector 10277* (syn, K!; isosyn, BM); Peninsular Malaysia, Perak, *Wray 2932* (syn, K!).

-*Plocoglottis foetida* Ridl., J. Linn. Soc., Bot. 32 (1896) 319. –Type: not designated.

Terrestrial **herbs**, evergreen, **stems** reed-like, to 100 cm tall, with leaves in its upper half, lower half with sheathing leaves only, stems pubescent. **Leaves** 6-12, lanceolate, acuminate, blades 19-30 × (1.9-)4.2-7.3 cm, plicate, shortly hairy, sheathing at the base, sessile. **Inflorescences** erect, to over 1 m tall, arising from the base of the leafy shoot, slightly longer or shorter than the leafy stem, pubescent; sterile bracts 7-9, tubular, lanceolate-oblong, acute, 2.3-2.5 cm long, glabrous or sparsely pubescent; raceme lax, many-flowered; rachis 18-23 cm long; floral bracts triangular, acuminate, acute, 10-15 × 8-9 mm, shorter than the pedicel plus the ovary, pubescent. **Flowers** to 38 mm long, yellow blotched reddish, lip cream or white and turning yellow as the flower ages; sepals and petals fleshy, densely pubescent on the outside and sparsely so on the inside; flowers reported to have a foetid smell. Pedicel and ovary 18-20 mm long, densely pubescent. Sepals lanceolate, acute, 20-23 × 8-10 mm, pubescent; median sepal spreading; lateral sepals deflexed. Petals similar to the sepals, slightly smaller, facing forwards. Lip elliptic, shallowly 3-lobed in its upper part, 9-10 mm long, united with the gynostemium at the base, concave, sides much recurved, lip broadest near the middle; midlobe a triangular tooth, deflexed, to 3 × 2 mm long; side-lobes obscure, obtuse, to 2 mm long. Gynostemium 6-9 mm long, straight, stout. **Fruit** ellipsoid, ca 5.2 × 1.4 cm.



*Specimen examined:* Peninsular Thailand. Narathiwat Province, Hala-Bala Forest Reserve, *Niyomdham 7189A* (BKF [spirit]).

*Illustrations:* Seidenfaden (1986): fig. 37a-c; Seidenfaden & Wood (1992): fig. 78g-h.

*Habitat and flowering time:* The habitat of the single Thai collection has not been recorded. However, in Malaya the plants are found in moist places in lowland forest and flower in February.

*Distribution:* Peninsular Thailand (1 collection seen), also in Peninsular Malaysia, Borneo and Sumatra.

*Notes:* *Plocoglottis gigantea* is well-characterised by its tall stems which lack pseudobulbs at the base. The hairy flowers have a concave lip, which is broadest near the middle and has strongly recurved side margins.

This species is in Thailand known only from a single collection made in the Province of Narathiwat in the extreme south of the country in 2004. The species was originally included in the list of the Thai *Plocoglottis* species (Seidenfaden, 1972: 109; 1986: 70, fig. 37a-c) because of a literature reference made by Haniff (1916: 353) who recorded the species for "Setol" (= Satun). Haniff was, however, not sure about the identity of his plant.

The flowers have been reported to have a foetid smell, which Ridley based his species name *Plocoglottis foetida* on (which is considered synonymous with *P. gigantea*).

##### 5. *Plocoglottis bokorensis* (Gagnep.) Seidenf.

Dansk Bot. Ark. 33 (1979) 219; Opera Bot. 89 (1986) 71; Opera Bot. 114 (1992) 105. –Basionym: *Bulbophyllum bokorense* Gagnep., Bull. Mus. Natl. Hist. Nat. II: 22 (1950) 399. – **Type:** Cambodia. Bokor, *Poreé-Maspero s.n.* (P). **Fig. 2.**

–*Plocoglottis mirabilis* Seidenf., Bot. Tidsskr. 65 (1970) 336; Bot. Tidsskr. 67 (1972) 109. –Type: Thailand, Khao Yai National Park. 1300 m, *Cumberlege 926* (C!).

Terrestrial **herbs**, evergreen, stems reed-like, 40-50 cm tall, with several leaves in its upper half, lower half with sheathing leaves, arising from distinct pseudobulbs. **Pseudobulbs** bottle-shaped to conical, 7-8 × 3-4 cm, with internodes 3.5-4 cm, dark olive-green and becoming purplish brown when old. **Leaves** (5-)8-10, elliptic-lanceolate, acute, without prominent petioles, blades 8-16.5 × 1.9-3.5 cm, plicate, glabrous, basally sheathing, blades wavy. **Inflorescences** 30-51 cm long, arising from the base of the pseudobulb, mostly



**Figure 2.** *Plocoglottis bokorensis* (Gagnep.) Seidenf. with reed-like stem (photo taken in Khao Yai National Park, Thailand). A. Plant, note the prominent pseudobulbs (arrowhead); B. Inflorescence; C. Flower. Photo: S. Chantaranorrapint (Buakhlai 70 voucher in BCU).

slightly taller than the leafy stem, pubescent; sterile bracts 5-8, scattered along the flowering stem and a few clustered at its base, lanceolate-oblong, tubular, acute, 2.7-4 cm long, glabrous; raceme lax, 7- to 15-flowered; rachis (7-)13-20 cm long; floral bracts ovate-lanceolate, acuminate, 8-12 × 3-5.5 mm, shorter than the pedicel plus the ovary, pubescent, glossy whitish green. **Flowers** pale pink or yellow with red blotches, lip uniformly yellow or whitish-yellow with purple markings at the base. Pedicel and ovary 15-28 mm long, pubescent. Sepals oblong-lanceolate, navicular, subacute or acute, 5- or 7-veined, pubescent on the outside, glabrous and glossy on the inside, spreading; median sepal hooded, 13-20 × 5-7 mm; lateral sepals similar but slightly narrower, mucronate. Petals narrowly oblong, obtuse, 3- or 5-veined, (11.5-)12.3-18.5 × 2.6-5 mm, glabrous. Lip ovate, shallowly 3-lobed, 7.5-11 × 8.5-12 mm, widest in its recurved upper part, sides not much recurved, base with a distinct cavity formed by the flanges (which join the lip to the gynostemium) and the bases of lip and gynostemium; midlobe triangular, 0.6-1 × 0.5-1.5 mm; side-lobes triangular, obtuse, ca 3 × 2-2.5 mm. Gynostemium 4.5-7 mm long, glabrous, stigma triangular or heart-shaped.

*Specimens examined:* Northern Thailand, Nan Province, Doi Phu Kha National Park, *Srisanga* 2584 (QBG); Eastern Thailand, Nakhon Ratchasima Province, Khao Yai National Park, *Cumberlege* 926 (C [spirit]); Southwestern Thailand, Phetchaburi Province, Kaeng Krachan National Park, *Middleton & al.* 3291 (BKF [spirit]); Central Thailand, Nakhon Nayok Province, Khao Yai National Park, *Buakhlai* 70 (BCU [spirit]); Southeastern Thailand, Trat Province, Kao Kuap, *Put* 2978 (K).

*Illustrations:* Seidenfaden (1970): fig. 14a-e [as *Plocoglottis mirabilis* Seidenf.]; Seidenfaden (1986): fig. 38a-e, pl. Vb; Seidenfaden (1992): figs. 56a-e.

*Habitat and flowering time:* The only available detailed collector's record (*Srisanga* 2584, QBG!) indicates that the plants grew in dry evergreen forest at an altitude of 800 to 1100 m. Plants in Khao Yai National Park are reported to grow in a more humid environment. Flowering takes place between May and July.

*Distribution:* In several widely scattered localities in northern, eastern, southwestern, central and southeastern Thailand, also in Cambodia, Laos and Vietnam.

*Notes:* This species is characterized by its reed-like stems which have prominent pseudobulbs at the base. The lip shape is a distinguishing feature from *Plocoglottis gigantea*, as it is generally widest in its apical part and has

entire and only little decurved side margins. The Thai plants were originally described as *P. mirabilis*, which was later found to be conspecific with *Bulbophyllum bokorensis* Gagnep.

*Plocoglottis bokorensis* is interesting from a phytogeographical point of view. It is known from several widely scattered localities in northern, eastern, southwestern, central and south-eastern Thailand, and is therefore the only Thai *Plocoglottis* species which is apparently absent from the Peninsula.

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### References

- Beaman, T.E., J.J. Wood, R.S. Beaman and J.H. Beaman. 2001. *Orchids of Sarawak*. Natural History Publications, Kota Kinabalu.
- Comber, J.B. 1990. *Orchids of Java*. Bentham-Moxon Trust, Royal Botanic Gardens, Kew.
- Comber, J.B. 2001. *Orchids of Sumatra*. Natural History Publications, Kota Kinabalu.
- Haniff, M. 1916. Record of a few orchids. *Agricultural Bulletin of the Straits and Federated Malay States* **1**: 353-355.
- Pridgeon, A.M., P.J. Cribb, M.W. Chase and F.N. Rasmussen. 2005. *Genera Orchidacearum*, vol. 4 (*Epidendroideae*, part one). Oxford University Press.
- Reichenbach, H.G. 1865. *Plocoglottis lowii*. *Gardeners' Chronicle* **1865**: 434.



- Seidenfaden, G. 1970. Contributions to the orchid flora of Thailand III. *Botanisk Tidsskrift* **66**: 303-356.
- Seidenfaden, G. 1972. Contributions to the orchid flora of Thailand IV. *Botanisk Tidsskrift* **67**: 76-127.
- Seidenfaden, G. 1986. Orchid genera in Thailand XIII. Thirty-three epidendroid genera. *Opera Botanica* **89**: 1-216.
- Seidenfaden, G. 1992. The orchids of Indochina. *Opera Botanica* **114**: 1-502.
- Seidenfaden, G. and T. Smitinand. 1959-1965. *The Orchids of Thailand – A preliminary list*. The Siam Society, Bangkok.
- Seidenfaden, G. and J.J. Wood. 1992. *The Orchids of Peninsular Malaysia and Singapore*. Olsen & Olsen, Fredensborg.
- Smith, J.J. 1926. Orchidaceae Novae Malayenses, XI. *Bulletin du Jardin Botanique de Buitenzorg, ser. III*, **8**: 35-70.
- Vaddhanaphuti, Nantiya. 2005. *A field guide to the wild orchids of Thailand*, ed. 4. Silkworm Books, Chiang Mai.

